

# U.S. Household Debt Reduction

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## Summary

Since the third quarter of 2008, U.S. household debt has steadily fallen. Household debt reduction is known as deleveraging, and such substantial and persistent deleveraging (reflected in Federal Reserve data) has been uncommon over the past several decades. Given that much household debt is used to finance consumption, which accounts for about 70% of gross domestic product, continued deleveraging implies slower consumption growth and economic recovery. Beginning in the third quarter of 2007, household net worth (i.e., the difference between the value of assets and liabilities) preceded the fall in household debt. The recent drop in household net worth has also been substantial and persistent relative to previous decades and, therefore, may arguably have precipitated such pronounced household deleveraging.

Household deleveraging may dampen the immediate effectiveness of legislative efforts to generate economic stimulus. For example, H.R. 363 and its companion S. 170, the Housing Opportunity and Mortgage Equity Act of 2011, were introduced to facilitate the refinancing of mortgages held by the government-sponsored enterprises. In addition, the Obama Administration announced an initiative to assist qualified homeowners with privately held mortgages refinance into lower rate loans. If refinancing activity results in lower mortgage payments, then households may have more discretionary income to spend and, therefore, spur economic stimulus. Given the trend of household debt reduction, the additional income that would have gone toward paying mortgage interest still may not be applied to new spending. Households may prefer using the additional income to pay down current debt obligations. Hence, such legislative efforts may enhance future borrowing capacity and long-term consumption if households continue to strengthen their balance sheets via deleveraging, but the effect on near-term consumption activity may be modest.

This report presents information on recent household debt usage patterns. It also discusses possible reasons for the reduction in household credit use. Consumers have reduced their indebtedness by accelerating repayment of outstanding debts and defaulting on loan obligations. Lenders have also tightened lending standards. Hence, both demand and supply factors can explain the decline in household credit usage.

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### Introduction

Over the past several decades, U.S. household indebtedness has generally risen regardless of macroeconomic or financial conditions. In light of the 2007-2009 recession, however, households are reducing their debt burdens. Household debt balances fell in the third quarter of 2008 and continued to do so until the second quarter of 2011 when they rose by 0.55% before resuming their downward trend. Simultaneous declines in household income and net worth made it difficult for some households to support previous debt levels, thus encouraging them to reduce debt service obligations and work toward restoring the health of their balance sheets.

Household debt reduction (or deleveraging) may have important implications for job creation and economic recovery. Deleveraging may translate into a reduction in near-term consumption, which typically accounts for approximately 70% of gross domestic product and likely an important source of economic recovery. Deleveraging may also manifest itself in the form of above normal loan defaults that weaken the banking system and discourage new lending, which can be the source of job creation.

Moreover, when consumer spending and bank lending are curtailed, fiscal policy initiatives (e.g., tax cuts or spending increases) become less effective at stimulating the economy. For example, academic experts have proposed large-scale mortgage refinancing efforts to propel economic stimulus. In light of these recommendations, the purpose of policy initiatives (e.g., the Home Affordable Refinance Program [HARP], H.R. 363 and its companion S. 170, the Housing Opportunity and Mortgage Equity Act of 2011) is to facilitate the refinancing of mortgages. In addition, the Obama Administration announced an initiative to assist qualified homeowners, whose mortgages are not owned or guaranteed by any institution affiliated with the federal government, in lowering their mortgage rates. If refinancing activity results in lower mortgage payments, then households may have more discretionary income to spend and, therefore, spur economic stimulus. Some households, however, are choosing to pay down current debt obligations, which means any additional income that would have gone toward mortgage interest still may not be applied to new spending. Hence, policies aimed at stimulating near-term consumption may instead enhance future borrowing capacity and longer-term consumption if households continue to strengthen their balance sheets via near-term deleveraging.

This report presents data illustrating household deleveraging since 2008 in comparison to previous trends in household credit use. It also presents various explanations for deleveraging—in particular, changes in both consumer demand and lending supply. On the demand side, job losses and declining wealth particularly associated with declining real estate values are factors that made it difficult for households to repay old loans or secure new ones. On the supply side, rising loan losses caused lenders to write off more obligations, which put a strain on lenders' (regulatory)

<sup>&</sup>lt;sup>1</sup> See CRS Report R41434, *Job Growth During the Recovery*, by Linda Levine; Atif Mian and Amir Sufi, "Consumers and the Economy, Part II: Household Debt and the Weak U.S. Recovery," *Federal Reserve Bank of San Francisco Economic Letter* (2011-02), January 18, 2011.

<sup>&</sup>lt;sup>2</sup> See CRS Report R41578, *Unemployment: Issues in the 112<sup>th</sup> Congress*, by Jane G. Gravelle, Thomas L. Hungerford, and Linda Levine.

<sup>&</sup>lt;sup>3</sup> See Alan Boyce, Glenn Hubbard, and Chris Mayer et al., *Streamlined Refinancings for up to 14 Million Borrowers*, Columbia University Graduate School of Business, Draft 13, New York, NY, January 18, 2012, http://www4.gsb.columbia.edu/null/download?&exclusive=filemgr.download&file\_id=739308.

<sup>&</sup>lt;sup>4</sup> See CRS Report R40210, Preserving Homeownership: Foreclosure Prevention Initiatives, by Katie Jones.

<sup>&</sup>lt;sup>5</sup> Institutions affiliated with the federal government are Fannie Mae, Freddie Mac, and the Federal Housing Administration. See http://www.latimes.com/business/la-fi-obama-refi-plan-20120202,0,6263819.story.

capital reserves. Consequently, lending standards are higher and likely to remain until lenders feel more confident that borrowers have the ability to repay.

## **Recent Household Deleveraging Patterns**

**Figure 1** illustrates the Federal Reserve's aggregate household debt service burden ratio (DSR). The DSR is the percentage of disposable personal income required to make minimum repayments on outstanding mortgage and consumer debt.<sup>6</sup> Beginning in the mid-1990s, the DSR rose but then declined after 2008. The DSR movements are affected by changes in the amount of household debt, changes in household income, and changes in interest rates (debt costs). Rising incomes and falling interest rates would cause the DSR to fall over time.<sup>7</sup> Given the rise in real disposable income prior to the financial crisis coupled with falling interest rates, the rise in the DSR reflects household debt usage rising at a faster pace than household income growth. Conversely, the DSR might be expected to rise during recessions when incomes tend to fall. During the 2007-2009 recession, however, the DSR began to decline in 2008, which reflects a shift toward deleveraging by households as well as the refinancing of some debt at lower interest rates.

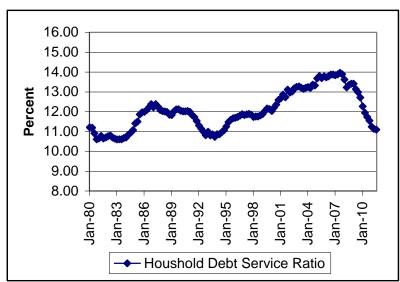


Figure 1. Debt Service Ratio, 1980-2011 (2nd Quarter)

Source: Federal Reserve, Household Debt Service Payments as a Percent of Disposable Personal Income

**Figure 2** illustrates the quarterly percentage change in total household debt balances since 1968, and the shaded areas indicate U.S. recessions. <sup>8</sup> Household debt balances consist of home

<sup>&</sup>lt;sup>6</sup> Disposable personal income is the sum of employee compensation, proprietors' income, income from rent, interest and dividends, and government transfer payments, less income and payroll taxes. The ratio of total outstanding debt to disposable personal income is difficult to interpret given that total debt outstanding represents what households must repay over more than one year whereas income represents one year of earnings. In other words, households do not have to pay off all loan balances with their annual income, meaning that the ratio does not accurately portray the household burden. See http://www.federalreserve.gov/releases/housedebt/.

<sup>&</sup>lt;sup>7</sup> See real disposable income growth at http://research.stlouisfed.org/fred2/series/DSPIC96?cid=110 and Census Bureau Table H3: Mean Household Income Received by Each Fifth and Top 5 Percent, All Races: 1967-2009 at http://www.census.gov/hhes/www/income/data/historical/household/index.html.

<sup>&</sup>lt;sup>8</sup> According to the National Bureau for Economic Research, the economy was in recession most recently (1) between

mortgages, revolving or credit card debt, and nonrevolving credit, which consists primarily of automobile and student loans. Note that the growth rate of household debt declined during the 1981-1982, 1990-1991, and 2001 recessions but still remained positive. Beginning in the second quarter of 2008 through the first quarter of 2011, however, the rate of change in debt usage became negative and was sustained. Post-2008 household deleveraging, therefore, appears to be atypical compared with previous economic contractions occurring over the past few decades.

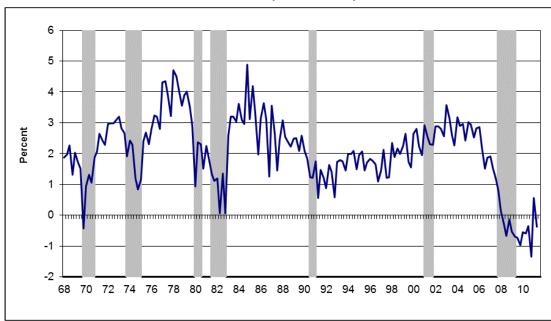


Figure 2. Quarterly Percentage Change in Total Household Debt Outstanding, 1968-2011(3rd Quarter)

**Source:** Federal Reserve, Flow of Funds Accounts (Release Z.1) and Consumer Credit (Release G. 19). **Note:** The grey bars indicate recessions.

**Table 1** illustrates the percentage changes in household debt usage from the second quarter of 2008 through the third quarter of 2011 by loan type. Mortgage debt represents the largest share of all household debt. A significant share of the decline in mortgage debt outstanding can be attributed to declining home equity loan balances, which can be used as a substitute for other types of consumer credit. Revolving or credit card debt use also declined, but growth in nonrevolving credit remained positive over this period.

<sup>&</sup>lt;sup>9</sup> Nonrevolving consumer credit also includes loans for boats, mobile homes, and other personal loans. Besides mortgages, revolving, and nonrevolving credit, the Federal Reserve calculates values for other forms of debt owed by households, including credit for securities bought on margin, but these appear to be less than 2% of the total. Figures for other kinds of debt are difficult to use because they include liabilities of non-profit organizations. See Federal Reserve, *Flow of Funds Accounts*, Table B.100.

<sup>&</sup>lt;sup>10</sup> Many borrowers could use mortgage credit to finance consumption rather than other forms of credit given that only mortgage interest is tax deductible. Mortgage loans are also easier to refinance when interest rates fall given that they are secured by real estate assets, so long as home values do not decline to the point where the underlying collateral becomes insufficient. Mortgage debt, therefore, may be cheaper than other forms of credit to finance expenditures.

Table I. Summary of Changes in Household Debt, 2008-2011

Type of Debt	Debt Outstanding (in billions of dollars)		Change from 2 <sup>nd</sup> Qtr 2008 through 3 <sup>rd</sup> Qtr, 2011	
	2 <sup>nd</sup> Qtr, 2008	3rd Qtr, 2011	(\$ billions)	(Percentage)
Home Mortgage	10,608	9,882	-726	-6.8
Home Equity Loans	1,127	888	-239	-21.2
Revolving Credit	970	792	-178	-18.3
Nonrevolving Credit	1,606	1,658	52	3.2
Total	13,184	12,332	-852	-6.5

Source: Federal Reserve, Flow of Funds Accounts (Release Z.I) and Consumer Credit (Release G. 19).

Note: Home Equity Loans are a subset of Home Mortgage Debt.

# **Explanations for Household Deleveraging**

Household deleveraging may be explained by factors influencing both the demand for and supply of credit. Beginning with demand-side explanations, the spike in unemployment and a decline in household net worth, which occurred during the recession of 2007-2009 and has continued along with declining home values, can lead to debt reduction either by inducing households to curtail credit use (and pay down existing debt) or in the form of defaults. On the supply side, lenders experiencing large volumes of loan losses may have also grown more reluctant to make loans. This section explains these factors in more detail.

### Decrease in the Demand for Credit

"Trigger events" are defined as sudden changes in circumstances that can lead to greater loan defaults. A steep rise in unemployment is an example of a trigger event. During the 2007-2009 recession, the unemployment rate soared to 10.0%, which was the highest it has climbed since 1982. Dob losses can translate into income disruptions that make it difficult to repay existing credit obligations or seek new loans.

A sharp, unanticipated decline in household net worth is another example of a trigger event. During the 2007-2009 recession, households saw a decline in household net worth that had not occurred in previous recessions over the past three decades (**Figure 3**). Net worth (i.e., the difference between the value of assets and liabilities) fell for seven consecutive quarters beginning in the third quarter of 2007. The most recent decline in net worth was larger and persisted for more successive quarters than did the steep decline in the stock market of the late 1990s, which lasted until approximately 2002. Much of the decline in net worth is attributable to real estate assets that many households financed through borrowing. The Federal Housing

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<sup>&</sup>lt;sup>11</sup> For a discussion of trigger events and the impact on delinquency and defaults, see Darryl E. Getter, "Contributing to the Delinquency of Borrowers," *Journal of Consumer Affairs*, vol. 37 (2003), pp. 86-100.

<sup>&</sup>lt;sup>12</sup> See http://research.stlouisfed.org/fred2/graph/?s[1][id]=UNRATE and CRS Report R41785, *The Increase in Unemployment Since 2007: Is It Cyclical or Structural?*, by Linda Levine.

<sup>&</sup>lt;sup>13</sup> See J. Bradford DeLong and Konstantin Magin, *A Short Note on the Size of the Dot-Com Bubble*, National Bureau of Economic Research, Working Paper 12011, Cambridge, MA, January 2006, http://www.nber.org/papers/w12011.pdf and Chairman Ben S. Bernanke, *Balance Sheets and the Recovery*, Speech, Board of Governors of the Federal Reserve System, February 21, 2003, http://www.federalreserve.gov/boarddocs/speeches/2003/20030221/default.htm.

Finance Agency and Case-Shiller house price indices show that U.S. house prices began declining in 2007, and homeowners were increasingly likely to find themselves "underwater" or "upsidedown" as the amount of their outstanding mortgage balances exceeded current home values.<sup>14</sup>

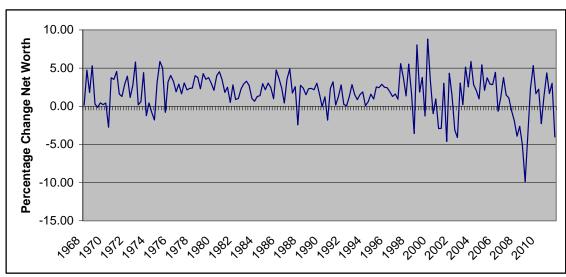


Figure 3. Quarterly Percentage Change in Total Household Net Worth, 1968-2011 (3rd Quarter)

Source: Federal Reserve, Flow of Funds Accounts, Table B.100.

Academic research suggests that changes in real estate values generate a greater response in consumer spending and borrowing decisions than do changes to stock values. <sup>15</sup> For one reason, most households purchase stocks with cash, which means there are no debt obligations to repay based upon the original purchase prices should their stock assets fall in value. Second, stock market declines are often short-lived in comparison to declines in real estate values, which means volatile short-term fluctuations are less likely to prompt investors to reassess longer term financial decisions. <sup>16</sup> Housing assets are also typically a much larger component of household balance sheets. Hence, stock market declines tend to have a smaller impact on household consumption and borrowing decisions relative to declines in real estate prices. Given that declining real estate asset values may lead to permanent wealth reductions that would prevent existing (mortgage) debt obligations from being repaid, two possible reasons for household deleveraging are worth considering.

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<sup>&</sup>lt;sup>14</sup> See Figure 2 in CRS Report R41572, *Incentives and Factors Influencing Foreclosure and Other Loss Mitigation Outcomes*, by Darryl E. Getter.

<sup>&</sup>lt;sup>15</sup> See Governor Edward M. Gramlich, *Consumption and the Wealth Effect: The United States and the United Kingdom*, Speech, Board of Governors of the Federal Reserve System, February 20, 2002, http://www.federalreserve.gov/boarddocs/speeches/2002/200202020/default.htm; John D. Benjamin, Peter Chinloy, and G. Donald Jud, "Real Estate Versus Financial Wealth in Consumption," *Journal of Real Estate Finance and Economics*, vol. 29, no. 3 (2004), pp. 341-354; and Nathalie Girouard and Sveinbjörn Blöndal, *House Prices and Economic Activity*, OECD Economics Department Working Paper 279, January 2001.

<sup>&</sup>lt;sup>16</sup> Conversely, investors would increase spending and borrowing by lesser amounts when stock prices rise sharply, which may be viewed as temporary increases in value, than they would during a housing boom.

### **Deleveraging for Precautionary Reasons**

Households may have a precautionary savings motive that influences them to reduce borrowing when household wealth drops. If households wish to maintain a certain level of wealth to protect against unexpected economic reversals, their consumption behavior is likely to change if those balances fall below desired thresholds. Households may reduce spending (and borrowing) and increase saving until net wealth has been restored to more desirable levels.<sup>17</sup>

For example, **Figure 4** shows that "cash-in" mortgage refinancings became more common relative to "cash-out" refinancings by 2008. <sup>18</sup> During the mid-2000s housing boom, many borrowers pulled equity out of their homes to finance expenditures. Freddie Mac refers to this type of transaction as a "cash-out" refinance when the outstanding mortgage balance increases by more than 5%. Conversely, a "cash-in" refinance occurs when borrowers refinance and pay down some mortgage principal, which reduces outstanding balances. The percentage of cash-in mortgage refinances began to exceed cash-out refinances in mid-2010.

A corresponding reduction of home equity loan balances can represent an array of borrowing given that this type of mortgage product was used to consolidate existing debt obligations, finance new consumption, and even finance the acquisition of new (real estate) assets. Moreover, the soaring unemployment rate may have influenced many households to reduce debt obligations just in case their continued employment prospects seemed at risk. Hence, such a marked increase in cash-in refinances arguably may reflect an increase in precautionary savings behavior by households in response to an adverse trigger event, which generates greater economic and financial uncertainty.

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<sup>&</sup>lt;sup>17</sup> See Christopher D. Carroll, "Buffer-Stock Saving and the Life Cycle/Permanent Income Hypothesis," *Quarterly Journal of Economics*, vol. 112, no. 1 (February 1997), pp. 1-55 and Christopher D. Carroll, Karen E. Dynan, and Spencer D. Krane, "Unemployment Risk and Precautionary Wealth: Evidence from Households' Balance Sheets," *Review of Economics and Statistics*, vol. 85, no. 3 (2003), pp. 586-604.

<sup>&</sup>lt;sup>18</sup> See Freddie Mac, "82 Percent of Refinancing Homeowners Maintain or Reduce Mortgage Debt in Third Quarter," press release, November 7, 2011, available at http://freddiemac.mediaroom.com/index.php?s=12329&item=81693.

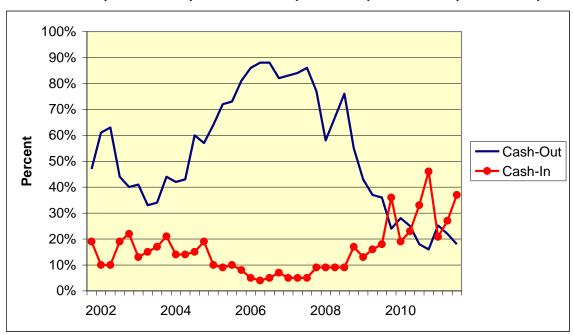


Figure 4. Percentage of Mortgage Refinancings in which the Outstanding Balance Increases ("Cash-Out") or Decreases ("Cash-In"), 2002-2011 (3rd Quarter)

Source: Freddie Mac.

**Note:** The percentages do not add to 100 because refinances that do not change the amount of principal outstanding are not included.

#### Deleveraging by Defaulting on Loans

A negative trigger event in the form of job losses (or shifts to part-time status) is likely to disrupt income streams. A severe and persistent disruption, when coupled with circumstances that prevent, for example, the sale of housing assets for amounts necessary to pay off outstanding mortgage balances, may cause households to default on existing loans. Moreover, risky mortgage underwriting practices prior to the 2007-2009 recession made it possible for some borrowers to receive mortgages that could only be repaid assuming continued house price growth rather than income growth. <sup>19</sup> The combination of relaxed underwriting standards, which allowed for rapid debt accumulation, and the unexpected trigger event, which was the large and pronounced downturn in U.S. house prices, resulted in greater household defaults on all types of loans. <sup>20</sup>

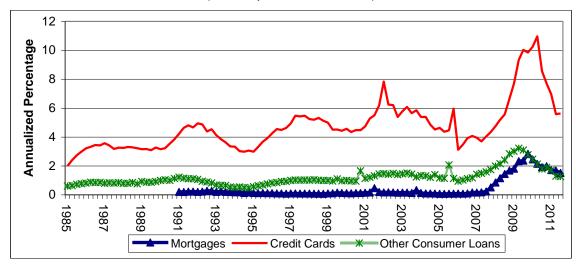
**Figure 5** shows charge-off rates for commercial bank loans in three categories: single-family residential mortgages, credit card debt, and other consumer loans. Charge-offs occur when

<sup>&</sup>lt;sup>19</sup> For more information on a risky mortgage underwriting practice referred to as "collateral-dependent lending," see CRS Report R42056, *Ability to Repay, Risk-Retention Standards, and Mortgage Credit Access*, by Darryl E. Getter.

<sup>&</sup>lt;sup>20</sup> The recent downturn in U.S. house prices had not been observed on a national scale since the 1930s. See David C. Wheelock, "The Federal Response to Home Mortgage Distress: Lessons from the Great Depression," *Federal Reserve Bank of St. Louis Review*, vol. 90, no. 3 (May/June 2008), pp. 133-148. For a discussion on how debt accumulation increases the severity of recessions, see Hyman P. Minsky, *The Financial Instability Hypothesis*, The Jerome Levy Economics Institute, Working Paper No. 74, May 1992 and Reuven Glick and Kevin J. Lansing, *U.S. Household Deleveraging and Future Consumption*, Federal Reserve Bank of San Francisco Economic Letter, 2009-16, May 15, 2009.

lenders conclude that a debt will not be repaid and charge it against their loss reserves. <sup>21</sup> During the past few years, all three major categories of household debt experienced rising loss rates.

Figure 5. Charge-Off Rates for Commercial Bank Loans to Households, 1985-2011 (Quarterly data at annual rates)



**Source:** Federal Reserve, Charge-Off and Delinquency Rates on Loans and Leases at Commercial Banks.

Note: Single-family residential mortgage data available only from 1991.

### Decrease in the Supply of Credit

The previous explanations involved factors influencing the demand for credit, but household deleveraging may also be affected by a reduction in credit supply. Rising loan losses may cause lenders to be more skeptical about extending new credit without greater assurances of repayment. Many banks may be unable to make new loans if they are still struggling to rebuild their required loan loss reserves and capital reserves, which have been diminished by loan defaults.<sup>22</sup> The observed household deleveraging, therefore, may reflect both decreasing supply and demand for credit given the extent to which lenders tightened underwriting standards, lowered existing lines of credit, and restricted new lending to stabilize profitability and satisfy regulatory capital requirements.<sup>23</sup>

<sup>&</sup>lt;sup>21</sup> Mortgage and credit card charge-offs differ. A credit card loan charge-off is recognized immediately, but writing off mortgages takes considerably more time. When it becomes clear that a mortgage default can not be cured, the property is generally seized via foreclosure and must be resold to recover some losses. For more information on the foreclosure process, see Appendix A of CRS Report R41572, *Incentives and Factors Influencing Foreclosure and Other Loss Mitigation Outcomes*, by Darryl E. Getter.

<sup>&</sup>lt;sup>22</sup> For information about the problem lists in which distressed banks and credit unions appear when they fall below their reserve requirements, see CRS Report R41718, *Federal Deposit Insurance for Banks and Credit Unions*, by Darryl E. Getter.

<sup>&</sup>lt;sup>23</sup> The New York Federal Reserve Bank reports that home equity borrowing limits fell by 12% through the third quarter of 2010, and many credit card accounts were closed by lenders, resulting in a 28% decrease in the limit on credit card borrowing. See Meta Brown, Andrew Haughwout, and Donghoon Lee et al., *The Financial Crisis at the Kitchen Table: Trends in Household Debt and Credit*, Federal Reserve Bank of New York, Staff Report No. 480, New York, NY, December 2010, p. 8, http://newyorkfed.org/research/staff\_reports/sr480.pdf. A study using data from Visa, Inc. revealed that 70% of credit line downsizing took place on dormant/inactive accounts. See Susan Herbst-Murphy, *Trends and Preferences in Consumer Payments: Lessons from the Visa Payment Panel Study*, Federal Reserve Bank of

The Federal Reserve's Senior Loan Officer Opinion Survey on Bank Lending Practices, which is conducted quarterly, asks bankers about changes in the standards and terms of bank lending as well as changes in the demand for loans.<sup>24</sup> **Figure 6** presents a graphical illustration of the responses collected between 1996 and 2011. The two dotted lines represent the net percentage of loan officers reporting that they expect to tighten standards for credit card and other consumer loans. The greatest tightening of loan standards over the period began in 2007.<sup>25</sup>

80
60
40
20
-20
-40
-60

1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011

— Credit Card Loan (Supply)
— Demand for Consumer Loans

Figure 6. Net Percentage of Banks Tightening Consumer Credit Standards, and Demand for Consumer Loans: 1996-2011

Source: Federal Reserve, Senior Loan Officer Opinion Survey on Bank Lending Practices.

**Notes:** In 2011, these data series were revised. Figures for other consumer loans' exclude new car loans after 2010 exclude new car loans. The demand figures now reflect only the demand for credit card loans.

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 $Philadelphia, Payment\ Cards\ Center\ Discussion\ Paper,\ Philadelphia,\ PA,\ May\ 2010,\ p.\ 3,\ http://www.phil.frb.org/payment-cards-center/publications/discussion-papers/2010/D-2010-Visa-Payment-Panel-Study.pdf.$ 

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<sup>&</sup>lt;sup>24</sup> See http://www.federalreserve.gov/boarddocs/SnLoanSurvey/default.htm.

<sup>&</sup>lt;sup>25</sup> The solid line in **Figure 6** represents the demand for consumer loans. The results show that the demand for consumer loans began falling after 2003, but these results coincide with the increase in the use of home equity credit. Hence, these data reflect the substitutability of home equity credit as well as the trigger events associated with the 2007-2009 recession. The increase in demand for consumer credit card and nonrevolving credit after 2009 may also reflect the difficulty obtaining home equity credit.

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